

The National 5 Mathematics course consists of 3 units:-

- Expressions and Formulae
- Relationships
- Applications

Assessments will take place throughout the year to encourage regular revision and to ensure retention of knowledge. Practise under exam-conditions more regularly should improve performance in the final exam.

Since we hope that students will choose to study Higher Maths in S6, we will extend topics which prepare students for work at Higher level maths by extending where appropriate. There may be the opportunity to pick up some Higher specific work if the National 5 work is going well.

Students will be issued with a formal homework exercise approximately once every 2 weeks. They will be expected to regularly look over classwork and study throughout the year, using resources issued or recommended by the department. They should ask for help with anything causing difficulty. A profile booklet for each unit will be issued; this contains information about the content of each unit.

The department hopes to continue to offer Supported Study classes on Monday lunchtime. We keep a register of attendance at Supported Study.

It is essential that pupils have their own scientific calculator for this course. Using a mobile phone calculator is not permitted by the SQA.

**Expressions and Formulae**

- Number work – surds and indices, rounding and scientific notation
- Algebra – multiplying out brackets, factorising, completing the square, working with algebraic fractions
- Geometry – finding the gradient of a line, lengths of arcs and areas of sectors, volumes of 3D shapes

**Relationships**

- Algebra – solving linear equations and inequations, straight line, function notation, simultaneous equations, changing the subject of a formula, work with quadratic functions
- Geometry – Pythagoras' Theorem, similarity, properties of 2D shape
- Trigonometry – trigonometric graphs, solving trigonometric equations, trigonometric identities

**Applications**

- Trigonometry – areas of triangles, calculating angles and lengths of sides of triangles, bearings
- Geometry – interpret 2D and 3D vectors, add and subtract vectors, magnitude of vectors
- Number work – add, subtract, multiply and divide fractions, compound interest, appreciation and depreciation, reverse percentage problems
- Statistics – 5-figure summary and boxplots, standard deviation, line of best fit, interpret results

National 5 Mathematics timeline (subject to change) – course starts at end of S3		
Week	Topic	
36	Lengths of arcs and areas of sectors	
37	Rules of Arithmetic, Rounding, Fractions, Scientific notation	
38	Multiplying out brackets	
39	Factorising	
40	Volume of sphere, cone, pyramid	
	SUMMER HOLIDAY	
1	All work from June	
2	Surds and Indices	
3	Simplify , add, subtract, x, / algebraic fractions	
4	Completing the square / Gradient	
5	Expressions and Formulae unit	
6	Equation of straight line	
7	Equation of straight line	
8	Function notation / Percentage calculations	
	OCTOBER HOLIDAY	
9	Use of Pythagoras, converse and 3D	
10	Solve equations and inequations	
11	Change the subject of a formula	
12	Simultaneous equations - graphically	
13	Simultaneous equations	
14	Graphs / Related angles in 4 quadrants	
15	Solve trig equations	
16	Similarity - length, area and volume	
17	Catch up week / Revision	
	CHRISTMAS HOLIDAY	
18	Quadratic equation from graph, Graph from equation	
19	<b>PRELIM</b>	
20	<b>PRELIM</b>	
21	Solve quadratic equations / Discriminant	
22	Apply properties of triangles, quadrilaterals, polygons, circles	
23	Apply relationship between centre, chord and perp bisector	
24	Sine rule, cosine rule and area of triangle	
25	Applications, including bearings, Trig Identities	
26	Vectors + and - using directed line segments, interpret 3D coordinates	
27	and line segments, + / - 2D and 3D vectors, calculate magnitude	
28	Quartiles, inter-quartile range, standard deviation	
29	Eqn of line of best fit	
	EASTER HOLIDAY	
30	Revision	